REGIONAL FORESTER SENSITIVE SPECIES (RFSS)-AQUATIC

Monitoring Question

To what extent is Superior National Forest management contributing to the conservation of sensitive species and moving toward short- term (10-20 years) and long-term (100 years) objectives for their habitat conditions?

Monitoring Conducted

Objective O-WL-28. *Sensitive Fish, Mollusks, Aquatic Insects. In all known sites and breeding locations, enhance, or restore high quality habitat for these species primarily by implementing management direction that promotes desired conditions for healthy and functional watersheds, riparian areas, and vegetation.* ***O-WL-29.*** *Additionally, during evaluation and restoration of one to two 5th level watersheds per year, known locations of the following sensitive aquatic species will provide priority areas for proactive management to improve habitats: Lake sturgeon, shortjaw cisco, northern brook lamprey, creek heelsplitter, and black sandshell.*

NOTE: Complete Monitoring and Evaluation discussions on Stream Monitoring Reaches, Stream Crossing Monitoring and Restoration, and Large Woody Debris can be found in Watershed-Riparian section. The following discussion is unique to Regional Forester Aquatic Sensitive Species.

In 2006, the Superior National Forest (SNF) completed several stream habitat restoration and monitoring projects that directly or indirectly benefited Regional Forester Sensitive Species (RFSS) including creek heelsplitter and black sandshell mussels, northern brook lamprey, and lake sturgeon (see Photos 1 and 2). Projects included establishment of long-term stream monitoring reaches, stream crossing surveys, stream crossing restoration projects, and monitoring of stream habitat improvement and stream crossing projects. In addition, monitoring projects were continued in 2006 in an effort to establish long term monitoring sites that would assist with evaluating the success of recent restoration activities and potential effects of land management to aquatic systems.

Photo 1. Aquatic organism passage projects.

Photo 2. Creek heel splitter mussel.

Stream Monitoring Reaches

As in 2005, sites were established in an effort to continue long-term monitoring of stream habitat, fish and mussel populations, and stream channel conditions. The sites were selected based upon proposed vegetation management and/or transportation activities, existing RFSS populations, stream channel and/or riparian conditions, and recent habitat restoration project sites. In the future, monitoring data will be used to evaluate habitat restoration projects as well as the potential impacts from land management activities to RFSS and aquatic systems.

Stream Crossing Surveys, Restoration Projects, and Monitoring

In 2006, the SNF Fisheries and Aquatic Program and the Forest Engineering Staff cooperated with external partners to restore 10 road and trail stream crossings to specifically improve aquatic organism passage for RFSS and/or their host fish species and to restore stream and riparian habitat conditions upstream and downstream from the project sites.

Dark River Large Woody Debris Project Monitoring

In 2006, stream channel conditions, large woody debris structures, and fish populations were monitored within the one-mile Dark River Large Woody Debris Project Area. Survey information was collected from established stream cross sections at 14 sites. Habitat structure measurements, site sketches, and photo documentation were also completed at all 28 structure sites. Fish populations were surveyed with backpack electro-fishing gear in both project area and control reference reaches.

Regional Forester Sensitive Species Surveys

Specific monitoring of known or potential populations of aquatic RFSS including creek heelsplitter mussels, black sandshell mussels, and northern brook lamprey did not occur on the SNF in 2006. In 2005, survey and monitoring locations were identified based on known or likely occurrences of RFSS in suitable lake and stream habitats. Survey crews conducted 200-meter wading and/or snorkel surveys at identified locations to determine if RFSS were present. If a RFSS was identified within a survey reach, additional line transect surveys were conducted to estimate abundance. Permanent line transects and/or survey areas were established at these locations to monitor the status of each population. Future presence and absence surveys are planned to occur every year to identify new populations and every 3-5 years at established monitoring sites. Survey locations that were planned for 2007 included the Kawishiwi, St. Louis, Dark, and Cloquet Rivers.

Evaluation and Conclusions

NOTE: Refer to Evaluation discussions on Stream Monitoring Reaches, Stream Crossing Monitoring and Restoration, and Large Woody Debris can be found in Watershed-Riparian Section.

Regional Forester Sensitive Species Surveys

Specific monitoring of known or potential populations of aquatic RFSS including creek heel splitter mussels, black sandshell mussels, and northern brook lamprey did not occur on the SNF in 2006. Although population surveys did not occur at stream crossing improvement sites, it is likely that these projects benefited populations, habitat, and host fish of aquatic RFSS species.

Standards and Guidelines

Standards and Guides for RFSS are the same as displayed in the Watershed-Riparian section.

Necessary Follow-up Actions and Management Recommendations

The Follow-up Actions that best address stream reach inventories and monitoring, RFSS surveys and habitat improvement, implementation and monitoring of road/trail stream crossings, lake habitat monitoring, and young riparian upland forest analysis are shown below. No management recommendations were identified. The complete list of Follow-up Actions can be found in Appendix A.

- Monitor established long term stream monitoring sites at least once every 3-5 years. Include water chemistry, invertebrate collection, and substrate sieve analysis in 2007 and beyond.
- Continue establishing stream monitoring reaches within established Landscape Assessment Areas. The location of monitoring sites should be downstream from proposed land management activities.
- Working with State and Tribal agencies, continue survey and inventory efforts to identify individuals and populations of RFSS on the SNF and continue establishing long-term RFSS population monitoring sites across the SNF.

- Continue identification, implementation, and monitoring of road/stream crossing restoration and habitat improvement projects that benefit RFSS populations, habitat, and riparian areas.
- A lake habitat monitoring protocol should be developed for the SNF that includes lake habitat, fish population and water quality parameters.
- Continue to develop a GIS based standard analysis that will assist with evaluating potential effects to RFSS and habitat as a result of proposed land management activities.
- There is a need to update the upland-young/upland-open analysis for the entire SNF every three years. Existing information is based on 10-12 year-old data. This information should be revised to assist with RFSS Biological Evaluation Analyses as well as other National Environmental Policy Act driven watershed analyses.

Collaborative Opportunities To Improve Efficiency And Quality Of Program

The SNF coordinated with other agencies and governments to inventory and monitor management indicator species, Regional Forester Sensitive Species, non-native invasive species, and riparian habitat conditions. Efforts will be made to coordinate future monitoring activities, share monitoring data, and potentially collaborate to fund future monitoring efforts. Potential partners in 2007 and 2008 include the Minnesota Department of Natural Resources, USDA-FS Northern Research Station, Minnesota Pollution Control Agency, U.S. Environmental Protection Agency, Fond Du Lac Band of Lake Superior Chippewa, 1854 Authority, Trout Unlimited, Arrowhead Fly Fishers, Potlatch Corporation, Laurentian Environmental Center, Minnesota Forest Resources Council, The Nature Conservancy, Voyageurs National Park, and Quetico Provincial Park.

Summary Points

- The SNF completed several stream habitat restoration and monitoring projects that directly or indirectly benefited Regional Forester Sensitive Species (RFSS). These included the restoration of 10 road and trail stream crossings and monitoring of stream restoration projects such as the Dark River Large Woody Debris project.
- Monitor established long term stream monitoring sites at least once every 3-5 years.
- Update the upland young/upland open analysis for the entire SNF every three years.